



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,260	09/27/2005	Shigeyoshi Hasegawa	10873.1763USWO	3366
53148 7590 03/27/2008 HAMRE, SCHUMANN, MUELLER & LARSON P.C. P.O. BOX 2902-0902 MINNEAPOLIS, MN 55402				
EXAMINER				
MILLER, ROSE MARY				
ART UNIT		PAPER NUMBER		
2856				
MAIL DATE		DELIVERY MODE		
03/27/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/551,260

Applicant(s)

HASEGAWA ET AL.

Examiner

ROSE M. MILLER

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2 and 6-8 is/are rejected.
7) ☒ Claim(s) 3-5 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 27 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date 9/27/05
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Art Unit: 2856

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-2 and 6-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Schneider et al. (US 6,296,610 B1)**.

Schneider et al. discloses an ultrasonic probe (see Figure 1) comprising: an ultrasonic element unit (16) for transmitting and receiving an ultrasonic wave while carrying out ultrasonic scanning (see column 9 lines 45 – column 10 line 41); a storage portion (fluid tight housing means 26) for storing the ultrasonic element unit (16); and an acoustic medium liquid (30) charged in the storage portion (see column 5 lines 30-43), wherein the ultrasonic element unit (16) includes a rotating mechanism portion (see column 6 lines 56-62) stored in the storage portion (motive means 20), the rotating mechanism portion (20) being a spontaneous rotation type motor whose rotation is induced magnetically (see Figure 13 and column 16 line 52 – column 17 line 4) and being supported by a supporting member (motor supported by wall 44), and the storage portion is sealed by the supporting member in a liquid-tight state (housing 26 fluid tight housing means).

As for the supporting member comprising an elastic member, it is inherent in the system disclosed by **Schneider et al.**, or would have been obvious to one of ordinary skill in the art at the time the invention was made, to utilize an elastic fluid tight housing as **Schneider et al.** clearly discloses the need to utilize a housing which is impervious to degradation by the acoustic medium liquid present within the housing and **Schneider et al.** discloses at column 6, lines 38-40 that the elastic material neoprene rubber is impervious to degradation by the preferred acoustic medium of liquid hydrocarbon based oil and can handle the expected temperature and environmental changes which can occur during the operation of the disclosed testing probe.

As for claim 2, **Schneider et al.** discloses the use of neoprene rubber as the preferred material for the supporting member (see column 6, lines 38-40).

With regards to claim 6, **Schneider et al.** discloses a reservoir (extension formed by walls 60, 62, 64, 66, and 68 – see column 6 lines 5-14) connected with the storage portion (via openings or passages in end wall 44 – see column 6 lines 13-14) so as to allow the acoustic medium liquid to flow between the reservoir (extension) and the storage portion (26).

With regards to claim 7, **Schneider et al.** discloses the reservoir is an elastic container (reservoir includes bellows or diaphragm 76) with concavities (inherent in the use of bellows).

With regards to claim 8, **Schneider et al.** discloses a reservoir extension formed by walls 60, 62, 64, 66, and 68 including bellows 76 – see column 6 lines 5-14) that is an elastic container (made from neoprene rubber) provided so as to allow the acoustic medium liquid to flow between the container (reservoir) and the storage portion (housing 26), wherein a

Art Unit: 2856

volumetric capacity of the reservoir (bellows 76 changes the volumetric capacity of the reservoir as needed) is changed due to deformation of the container (bellows are filled) in preference to stretching of a material.

Allowable Subject Matter

6. Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest an ultrasonic probe comprising: an ultrasonic element unit for transmitting and receiving an ultrasonic wave while carrying out ultrasonic scanning; a storage portion for storing the ultrasonic element unit; and an acoustic medium liquid charged in the storage portion, wherein the ultrasonic element unit includes a rotating mechanism portion stored in the storage portion, the rotating mechanism portion being a spontaneous rotation type motor whose rotation is induced magnetically and being supported by an elastic supporting member, and the storage portion is sealed by the supporting member in a liquid-tight state, especially wherein the ultrasonic probe further comprises a pressurizing means for pressurizing the acoustic medium liquid so as to form a positive pressure in the storage portion.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Matzuk (US 3,964,296) discloses an integrated ultrasonic scanning apparatus.

Suwaki et al. (US 4,375,818) discloses an ultrasonic diagnostic system assembled into an endoscope.

Hara (JP 08112281 A) discloses an ultrasonic probe with a liquid tightness keeping member for sealing liquid tightly the shaft and the apex main body.

Kolz et al. (US 5,916,170) discloses a method and apparatus for curvature detection in vessels from phase shifts of a plurality of input electrical signals.

Chon (US 6,478,766 B1) discloses an ultrasound handpiece.

Nita et al. (US 6,942,677 B2) discloses an ultrasound catheter apparatus.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROSE M. MILLER whose telephone number is (571)272-2199. The examiner can normally be reached on Monday - Friday, 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. M. M./
Examiner, Art Unit 2856
22 March 2008

/Hezron Williams/
Supervisory Patent Examiner, Art Unit 2856